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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/625,993	07/26/2000	Kyoko Higashino	Q60072	8492

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EXAMINER

GONZALEZ, JULIO C

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 07/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/625,993

Applicant(s)

HIGASHINO ET AL.

Examiner

Julio C. Gonzalez

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 9-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 9-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 15.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 10, is the claim implying that the stator core is not connected sometimes since the contact surfaces are formed only when the stator core is connected. What happens if the stator core is not connected? From the claim, it would seem like if the contact surfaces are formed by dividing a wide tooth or the stator core forms the contact surfaces? In what way is the wide tooth divided? How are the orthogonal surface and the division of the wide tooth related and the contact surfaces? Is the orthogonal surface the structure splitting the wide tooth?

In claim 11, what alternates, the size of interval or the air gaps? Respectfully, in what way does the size alternates?

In order to advance prosecution in the merits, the Prior Art will be applied as best understood by the examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al in view of Beard.

Huang et al discloses a stator core with a plurality of slots extending in axial direction (see figure 4b) and two sets of coils are fitted into slots (see figure 6) and the total of slots is 72 or more (see figure 9). Also, the stator core is formed as a lamination of a plurality of sheet-shaped magnetic members with a plurality of teeth defining the slots and the stator been formed in annular shaped (see figures 4a-4c).

However, Huang et al does not disclose, explicitly that the stator core is made of two pieces fixed together.

On the other hand, Beard discloses for the purpose of providing an electrical machine with high reluctance path for armature reaction flux, stator laminations been made of a first end piece and second end piece (see figure 1), which are fixed together to complete the annular shape of the stator core.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design an alternator as disclosed by Huang et al and to modify the invention by using two end surfaces for the purpose of providing an electrical machine with high reluctance path for armature reaction flux as disclosed by Beard.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al and Beard as applied to claim 1 above, and further in view of Maruyama et al.

The combined alternator discloses all of the elements above. However, the combined alternator does not disclose that the center of air gaps of adjacent slot opening are not the same.

On the other hand, Maruyama et al discloses for the purpose of reducing eddy current losses, a stator with adjacent opening of center of air gaps of slot opening is not the same (see figures 41, 42, 44).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined alternator as disclosed above and to modify the invention by having the center of air gaps not the same for the purpose of reducing eddy current losses as disclosed by Maruyama et al.

6. Claims 9-11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al in view of Beard and Muller.

Huang et al discloses a stator core with a plurality of slots extending in axial direction (see figure 4b) and two sets of coils are fitted into slots (see figure 6) and the total of slots is 72 or more (see figure 9). Also, the stator core is formed as a lamination of a plurality of sheet-shaped magnetic members with a plurality of teeth defining the slots and the stator been formed in annular shaped (see figures 4a-4c).

However, Huang et al does not disclose, explicitly that the stator core is made of two pieces fixed together.

On the other hand, Beard discloses for the purpose of providing an electrical machine with high reluctance path for armature reaction flux, stator laminations been made of a first end piece and second end piece (see figure 1), which are fixed together to complete the annular shape of the stator core.

However, neither Huang et al nor Beard disclose that the width of the teeth alternates in size.

On the other hand, Muller discloses for the purpose of facilitating the assembly of electrical machines, particularly, the insertion of windings in the stator slots, a stator wherein the width of the teeth alternate in size (see figure 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design an alternator as disclosed by Huang et al and to modify the invention by using two end surfaces for the purpose of providing an electrical machine with high reluctance path for armature reaction flux as disclosed by Beard and to alternate the size of the stator teeth for the purpose of facilitating the assembly of electrical machines, particularly, the insertion of windings in the stator slots as disclosed by Muller.

7. Claims 3-5, 12-14 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al, Beard, Muller and Maruyama as applied to claims 2, 11 and 15 above, and further in view of ordinary skill in the art.

The combined alternator discloses all of the elements above. However, the combined alternator does not disclose the ranges of slot opening degrees.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to come with those optimum ranges that the applicant discloses, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In *re Aller*, 105 USPQ 233.

Response to Arguments

8. Applicant's arguments with respect to claims 1-5 and 9-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


JOSEPH WAKS
PRIMARY EXAMINER

Jcg

July 2, 2002